

CIP 11.0420

### Cisco Test 640-816 ICND2

### Interconnecting Cisco Networking Devices - Part 2

Exam Number: 640-816 ICND2  
Associated Certifications: [CCNA](#)  
Duration: 75 minutes (45-55 questions)  
Available Languages: English  
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Exam Tutorial: [Review type of exam questions](#)  
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#### Exam Description

The 640-816 Interconnecting Cisco Networking Devices Part 2 (ICND2) is the exam associated with the Cisco Certified Network Associate certification. Candidates can prepare for this exam by taking the Interconnecting Cisco Networking Devices Part 2 (ICND2) v1.0 course. This exam tests a candidate's knowledge and skills required to successfully install, operate, and troubleshoot a small to medium size enterprise branch network. The exam covers topics on VLSM and IPv6 addressing; extending switched networks with VLANs; configuring, verifying and troubleshooting VLANs; the VTP, RSTP, OSPF and EIGRP protocols; determining IP routes; managing IP traffic with access lists; NAT and DHCP; establishing point-to-point connections; and establishing Frame Relay connections.

#### Exam Topics

The following topics are general guidelines for the content likely to be included on the Interconnecting Cisco Networking Devices Part 2 exam. However, other related topics may also appear on any specific delivery of the exam. In order to better reflect the contents of the exam and for clarity purposes, the guidelines below may change at any time without notice.

##### 01 Configure, verify and troubleshoot a switch with VLANs and interswitch communications

- Describe enhanced switching technologies (including: VTP, RSTP, VLAN, PVSTP, 802.1q)
- Describe how VLANs create logically separate networks and the need for routing between them
- Configure, verify, and troubleshoot VLANs
- Configure, verify, and troubleshoot trunking on Cisco switches
- Configure, verify, and troubleshoot interVLAN routing
- Configure, verify, and troubleshoot VTP
- Configure, verify, and troubleshoot RSTP operation
- Interpret the output of various show and debug commands to verify the operational status of a Cisco switched network
- Implement basic switch security (including: port security, unassigned ports, trunk access, etc.)

##### 02 Implement an IP addressing scheme and IP Services to meet network requirements in a medium-size Enterprise branch office network

- Calculate and apply a VLSM IP addressing design to a network
- Determine the appropriate classless addressing scheme using VLSM and summarization to satisfy addressing requirements in a LAN/WAN environment
- Describe the technological requirements for running IPv6 (including: protocols, dual stack, tunneling, etc)
- Describe IPv6 addresses
- Identify and correct common problems associated with IP addressing and host configurations
- Configure and troubleshoot basic operation and routing on Cisco devices

- Compare and contrast methods of routing and routing protocols
- Configure, verify and troubleshoot OSPF
- Configure, verify and troubleshoot EIGRP
- Verify configuration and connectivity using ping, traceroute, and telnet or SSH
- Troubleshoot routing implementation issues
- Verify router hardware and software operation using SHOW & DEBUG commands
- Implement basic router security

### 03 Implement, verify, and troubleshoot NAT and ACLs in a medium-size Enterprise branch office network

- Describe the purpose and types of access control lists
- Configure and apply access control lists based on network filtering requirements
- Configure and apply an access control list to limit telnet and SSH access to the router
- Verify and monitor ACL's in a network environment
- Troubleshoot ACL implementation issues
- Explain the basic operation of NAT
- Configure Network Address Translation for given network requirements using CLI
- Troubleshoot NAT implementation issues

### 04 Implement and verify WAN links

- Configure and verify Frame Relay on Cisco routers
- Troubleshoot WAN implementation issues
- Describe VPN technology (including: importance, benefits, role, impact, components)
- Configure and vary PPP connection between Cisco routers

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## Recommended Training

The following course is the recommended training for this exam:

- Interconnecting Cisco Networking Devices Part 2 ([ICND2](#)) v1.0

The course listed is offered by Cisco Learning Partners the authorized source for Cisco IT training delivered exclusively by Certified Cisco Instructors. For a list of Cisco Learning Partners, use the [Learning Partner Locator](#).

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## Additional Resources

A variety of Cisco Press titles may be available for this exam. These titles can be purchased through the [Cisco Marketplace Bookstore](#), or directly from [Cisco Press](#).